

AbstractA Structured Peptide Scaffold for Displaying Turn Libraries on Phage

The invention is directed to a model system for structure-activity analysis of peptide or protein molecules involved in important biological processes. Provided by the invention are combinatorial peptide libraries comprising disulfide-constrained cyclic peptides with sequences favorable for energy stabilized conformations. A preferred embodiment of the invention is directed to peptides containing  $\beta$ -turn tetrapeptide that form structured  $\beta$ -hairpin scaffold in solution. Methods of selecting and using such peptides are provided herein, which are useful for mimicking *in vivo* molecular interactions and designing therapeutic agents. Thus, the invention has profound utility for biological studies and drug development.

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